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A Model Option of Courses for Instruction in Wildland Recreation Management at the College Undergraduate Level.

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Recreational use of wildland is growing rapidly and forms a major portion of the manager's job. About one-third of today's forestry students will be employed by land management agencies or by companies committed to the multiple-use concept. Education, course materials and the supply of forest management graduates have lagged considerably behind needs and the demand for published information on managerial skills and for qualified personnel is increasing. To help meet these needs, this report contains information on the current and expected nature of the recreation management job on the western national forests; judgments of recreation managers on educational deficiencies of forestry graduates and recommendations for changes in forestry education; basic philosophies of education and recreation management accepted as guides in course development; a general framework for the technical content of a course in wildland recreation management; and a group of 4 courses geared to the above factors. The proposed courses should provide educators with a useful source for preparing their own courses in recreation management within the multiple-use context. Four categories of literature were reviewed and utilized in implementing the project: methods of research in education, methods of job analysis, theory of education and curriculum development, technical components and education in wildland recreation management. Additional course recommendations are expected to appear in 1969 as a publication of the Texas Agricultural Experiment Station. (JS)

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A MODEL OPTION OF COURSES FOR INSTRUCTION
IN
WILDLAND RECREATION MANAGEMENT
AT THE
COLLEGE UNDERGRADUATE LEVEL

December 31, 1968

U. S. DEPARTMENT OF
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Richard L. Bury

September 1, 1967

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Northern Arizona University

Flagstaff, Arizona

CONTENTS

<u>Introduction</u>	1
Objective	1
Problem	1
Literature	2
<u>Method</u>	3
Procedure	3
Feasibility	3
Scope	3
Sample	4
<u>Results: Judgements of Recreation Managers On</u> <u>the Western National Forests</u>	6
Curriculum type preferred	6
Theory vs. applications preferred	6
Capability of present recreation managers	6
Relative importance of recreation management jobs	7
Especially troublesome jobs	7
Recommendations for additional college education	8
Concepts, information, and skills most useful	8
Trends in visitor activities and installed equipment	9
Expected changes in U.S.F.S. recreation management policies	10
Recommended changes in college education	10
<u>Discussion</u>	12
Limitations of the study	12
Philosophy of the option and courses	12
<u>Recommendations</u>	16
A structure for subject-matter of wildland recreation management	16
Individual courses in wildland recreation management	17
Supporting courses	19
Major criticisms of proposed courses	19
<u>Summary</u>	20

APPENDIXES

- A. Sample Units: Forest Service Administrative Units, Other Federal Units, Educational Materials, and Educators Consulted
- B. Questionnaire and Covering Letter
- C. Perceived Importance of Recreation Management Jobs
- D. Especially Troublesome Jobs in Recreation Management
- E. Especially Troublesome Jobs for Which Additional College Preparation is Desired
- F. Knowledge and Skills Judged Most Useful in Forest Recreation Management
- G. Educational Significance of Jobs in Recreation Management
- H. Details of Structure for Concepts in Wildland Recreation Management
- I. Details of Suggested Courses
- J. Supporting Courses in Forestry and in Other Departments

FIGURES

- | | |
|---|-----|
| 1. Sample Units | 4a |
| 2. Structure for Concepts in Wildland Recreation Management | 16a |

A MODEL OPTION OF COURSES FOR INSTRUCTION IN
WILDLAND RECREATION MANAGEMENT AT THE
COLLEGE UNDERGRADUATE LEVEL

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INTRODUCTION

Objectives: This report contains information on (1) the current and expected nature of the recreation management job on the western National Forests; (2) judgments of recreation managers concerning the educational deficiencies of new forestry graduates, and managers' preferences for changes in forestry education; (3) basic philosophies of education and of recreation management accepted for guidance in course development; (4) a general framework for technical content of wildland recreation management; and (5) a group of four courses keyed to the above three factors. These courses could be used as electives within undergraduate curricula such as forestry or natural resources management. Emphasis lies on recreation management within the context of multiple use.

Problem: Recreational use of wildland is growing very rapidly, and forms a major portion of the manager's job on many wildland areas. (ORRRC: 25-73) About one-third of today's forestry students will be employed by land management agencies, or by companies, who are committed to the multiple-use concept.

Education and course materials in wildland recreation have lagged considerably behind needs. This means that we must intensify our efforts if forestry graduates are to fit current and future management requirements. (Dana and Johnson: 273-284). The supply of graduates to meet this need has almost certainly been lower than the demand for them. Demand for professional recreation personnel is expected to exceed the supply greatly during the period 1968-1980. (Hawkins: 20)

Published information on managerial skills required in this field is very scarce. Although many institutions are initiating one or several courses in recreation management, this study revealed that field data have seldom been rigorously used in development of curricula.

Because education theorists believe that learning occurs most

easily when teaching relates to field application (Fraser 1963: 25), the proposed courses should provide educators with a useful benchmark for preparing their own courses in recreation management within the multiple-use context.

Literature: Four types of literature were required and reviewed for this project; the most useful sources are indicated: (1) methods of research in education (Good, Good and Scates, Harris, Travers); (2) methods of job analysis (Fryklund, Lanham, Otis and Leukart, Wylie); (3) theory of education and curriculum development (Association for Supervision and Curriculum Development, Bloom, Doll, Dressel, Strateneyer et al, Smith et al); and (4) technical components and education in wildland recreation management (Brockman, Brooks, Bureau of Outdoor Recreation, FNPOR, Foss, NAS-NRC).

METHOD

Procedure: In brief, the investigative procedure has been:

- (1) check with top-level recreation administrators concerning the usefulness and feasibility of the proposed study
- (2) review literature
- (3) collect information and opinions from field managers on the nature of current and future recreation management and education therefor
- (4) collect information on courses and curricula now offered as preparation for careers in recreation management
- (5) synthesize from (2), (3), and (4) a general structure for subject matter in wildland recreation management per se and its integration within the multiple-use concept
- (6) design outlines for courses to meet the educational needs identified in step (5)
- (7) request evaluation of the outlines by recreation managers and by professors of recreation management
- (8) modify framework and outlines as advantageous from the evaluative comments
- (9) write final report

Feasibility: Top recreation administrators in the U.S. Forest Service, National Park Service, and U.S. Bureau of Outdoor Recreation agreed that the project was feasible, that results would be highly useful, and that no essentially similar studies had been conducted, to the best of their knowledge.

Scope: Job analysis was limited to recreation management on National Forests west of the 100th meridian. This decision was based on interviews with the above administrators and on job descriptions and workload analyses.

Recreation management of multiple-use lands (such as the National Forests) was found to be significantly different than that on National Parks. Consideration of both types of recreation management would have broadened this study beyond its finan-

cial and time limits. Similarly, it was felt that recreation management on National Forests in the eastern United States might be distinctively different than in the western States, especially in view of the different general nature of multiple use mixes and urban pressures. The Forest Service was considered the best agency for study because it employs more natural resource professionals as recreation managers, and because its policies and guidelines for recreation administration are better developed, than those of other agencies engaged in multiple-use management of natural resources.

Within the National Forest system, this study was limited to analysis of management at the District and Forest levels. Undergraduate education should be most useful during those first ten years of a career, during which most professionals will work within these two levels.

With appropriate care, results may indicate useful education for recreation managers on eastern National Forests and on large industrial forests, as well as some clues for recreation management on parklands.

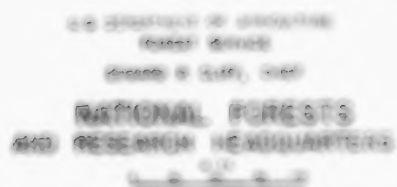
Sample: The field sample was composed of 18 Ranger Districts and 18 National Forests -- 3 Districts and 3 Forests within each of the six western Regions of the U.S. Forest Service. (Appendix A and Figure 1) Each District analyzed lies within one of the Forests analyzed. National Forests average over 1500 square miles in size. A Supervisor is in charge of each Forest; he and his staff translate the broad objectives and policies of the U.S. Forest into programs and operational guidelines for resource management on the Forest. His staff includes, in most instances, a group of specialists in recreation management.

Each National Forest is divided into Ranger Districts, each of which is administered by a District Ranger. Normally, a Forest will contain about 6 Districts. Direct management of Forest resources is carried out by the District Ranger and his staff, which is broadly similar to the Forest Supervisor's staff but is much smaller.

Districts and Forests were selected by the Assistant Regional Forester in charge of Recreation Management within each of the Regions; in general, the Forests and Districts selected within each Region were those receiving the heaviest recreational use. This criterion was employed because it is on such units that recreation management is most intensive, problems of management are therefore most acute and best-known, and men trained in recreation

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management are most likely to be assigned.

The curricula, courses, and professors involved in this study were selected by (a) inclusion of all members of the Association of Western Forest Recreation Instructors, and (b) search of Lovejoy's College Guide for curricula in recreation, recreation leadership, forestry, and conservation. (Lovejoy) Institutions responding with materials are listed in Appendix A, as are educators who were consulted. In-service programs and studies of the National Park Service and the U.S. Forest Service were also used. (U.S. Forest Service, U.S. National Park Service, Baggle)

RESULTS

JUDGMENTS OF RECREATION MANAGERS ON WESTERN NATIONAL FORESTS

The nature of recreation management on western National Forests is most clearly revealed in the periodically-revised workload analysis of the U.S. Forest Service. The 1965 analysis provides the most recent data. Qualitatively, the analysis splits recreation management into 19 functions and describes the jobs in each function. Quantitatively, the analysis permits calculation of the number of managerial hours to be allocated to each of these functions through appropriate calculations with volume of business data for each Forest and District.

Recreation managers at the Supervisor's Office (i.e., Forest headquarters) spend relatively more time than their District counterparts in functions such as inspections, training, and cooperation with other organizations. In contrast, District recreation managers spend more time with direct management of government-owned recreation sites. Managers at both levels spend considerable time on the problems of wilderness ("near-natural") areas and privately-owned developments on land leased from the Forest Service. Recreation management also encompasses project (non-routine) jobs in functions such as planning, administrative research studies, and construction.

To sharpen and deepen knowledge of recreation management in the Forest Service, a questionnaire was prepared (Appendix B) and sent to each of the 36 sampling units from which data had earlier been gathered on recreation management workloads. Response was obtained from 35 of 36 units. The major items of information and elicited opinions follow:

1. Type of curriculum preferred: Curricula in general resource management with a minor in recreation management were strongly preferred to curricula in either general resource management or specialized curricula in forest recreation management.
2. Theory vs. applications preferred: Respondents indicated that specialized courses in forest recreation management should contain about one-half theory and one-half application of theories.
3. Capability of present recreation managers: Capability ratings were keyed to Bloom's 6 major objectives of education (see item 3 of the questionnaire and Bloom). About two-thirds

of the respondents rated managers as Medium in capability according to most of the six criteria or objectives. Recreation managers on Ranger Districts were rated as Low in capability by about one-third or one-fourth of the Ranger District respondents. However, recreation managers at the Forest Supervisor level rated their recreation management colleagues as about two-thirds medium, and the remainder equally Low and High.

4. Relative importance of recreation management: Managers were asked to rate the specific jobs comprising total recreation work load as High, Medium, or Low in importance as related to success of recreation management on the National Forests. The results can be used as a guide to those jobs for which a recreation manager must have a high level of competence. The jobs which were rated were identical with the list resulting from the workload analysis, and for which we have derived the amount of time to be allocated for each recreation management job on each of the 36 sample units.

In selecting from a list of all their jobs in recreation management, managers on Ranger Districts rated as highest in importance those jobs involving training and being trained in recreation management, the operation and maintenance of developed recreation sites, and supervision of employees concerned with direct field operations.

Their counterparts at the Forest Supervisor level emphasized the importance of coordinating management for recreation with that for other forest products, broad-level management of dedicated wilderness areas, keeping posted on recreation management, and training. Non-recurrent jobs that received the highest ratings were those involving planning for area development, study and reclassification of specific areas for other recreational uses, and preparation of site development plans. Details in Appendix C can provide valuable clues to the educator.

5. Especially troublesome jobs: Again, this question was asked to provide clues to the nature of instruction which would be most valuable to the potential recreation manager if he were to work for the U.S. Forest Service.

District recreation managers apparently experience the highest difficulty in jobs such as controlling over-use and congestion on developed sites, enforcing contracts with operators of commercial establishments and residences located on National

Forest land, training personnel in recreation management, and protecting the natural resources on areas receiving recreation use.

Their counterparts at the Supervisor's Offices were troubled by the details of participating in surveys planned by the Regional Office, ensuring proper administration of near-natural (wilderness) areas, coordination of management plans and objectives, and advising District personnel in the preparation and revision of contracts for commercial establishments and residences located on National Forest land.

Preparation of area development plans was judged the most troublesome of project jobs; it was followed in difficulty by administration of recreation visitor fees, and study and reclassification of areas for recreation uses. (Details, Appendix D)

6. Recommendations for additional college education: To sharpen the focus of needed improvements in education, respondents were asked to designate those Especially Troublesome jobs for which students should be prepared in college. (Details, Appendix E) District managers felt that college education should include preparation for training personnel in recreation administration, controlling over-use and congestion, protecting natural resources, and protecting public health and safety.

In contrast, recreation managers in the Forest Supervisors' Offices felt that more education would be desirable for composition of routine letters and reports, planning and conducting surveys of the impact of recreation on other forest uses, developing standards for administration of recreation resources, and planning of field training seminars for the solution of recreation management jobs.

Recommended education for project jobs included preparation for area development planning, sampling of recreation use by automatic means, planning for site development and/or improvement, and interim management prescriptions for areas which may later be developed for recreational use.

7. Concepts, information, and skills most useful: Respondents were given an array of subjects, concepts, and skills and asked to indicate those most useful in recreation management today (see p. 4 of questionnaire). The social sciences were most frequently checked. This reinforces the opinions of re-

source managers at a recent seminar on education. (Foss) Educators and resource managers who evaluated the preliminary course outlines in this study also emphasized the need for more education in social sciences, as did Geyer in his excellent review of recreation and parks curricula today. (Geyer: 7)

District managers also felt that business management and applied arts (such as landscape architecture) contained much material of usefulness to the recreation manager; Forest managers selected integrative disciplines such as regional planning. As expected, managers felt that the multiple-use management concept was highly useful. (Appendix F)

8. Trends in visitor activities and installed equipment: The answers to this open-ended question were extremely diverse. However, some general trends may be extracted from the replies:

District managers expect increase in wilderness use, camping, snowplay and skiing, and all water-oriented activities. Forest managers foresee increases in the same activities and also in snowmobiles and in self-learning from various interpretive devices. Both District and Forest personnel expect the present trend to trailers and pickup-truck "campers" to continue.

Similarly, both District and Forest personnel expect that the Forest Service will intensify development on recreation sites. They emphasize the increasing likelihood of flush toilets, showers, sanitary dump stations, utility hookups (water, electricity, and sewage) for trailers and pickup campers at each family site, and interpretive facilities such as nature centers and nature trails.

Experts outside the Forest Service also provide relevant estimates of trends in recreation activities. Total leisure time may be broken up into many different ways rather than the now-traditional 2-day weekends and 2-week vacations. (David) The possible appearance of "sabbaticals," 3-day weekends, and/or several vacations per year could have dramatic effects on outdoor recreation needs. Gregerson believes that conveniences and sociability are now desired more generally than are lovely surroundings, and that we should therefore plan mass recreation sites with high carrying capacity and relatively high level of crowding. (Gregerson) Director Crafts of the Bureau of Outdoor Recreation sees more emphasis on natural beauty and the quality of life, and therefore hopes for expansion of efforts of interpretation of nature and man's culture, and more education for the maintenance and improvement of environmental quality. (Crafts) And, finally, Secretary Freeman foresees a higher

priority for recreation within the U.S. Department of Agriculture activities, and looks to expansion of the Wilderness Preservation System, efforts to enhance our heritage of natural and cultural assets, and creation and expansion of national systems of trails and scenic rivers. (Freeman)

The above trends are verified by Richard J. Costley and William Lucas, top-ranking administrators of recreation management in the Forest Service. (Costley and Lucas). They anticipate site modifications to accommodate the activities and equipment that visitors want to bring; this will involve a greater development of sites for various activities, "hardening" of sites to withstand heavier use, and improved quality of planning and materials. Along with this, they expect to develop more rules for visitor behavior because more visitors seem comfortable under a moderate level of regulation. Environmental quality is expected to become more important, and the forester will be expected to modify the environment so that it is pleasant to the visitor.

9. Expected changes in U.S.F.S. recreation management policies: Again, replies were extremely diverse. However, four changes are seen most likely by both District and Forest managers: (a) greater complexity and quality in recreation services and facilities; (b) more concern with site protection and environmental quality; (c) more receptivity to public wants and (d) more interpretive facilities. These factors all seem to fit well with the anticipations of Director Crafts. Costley and Lucas, independently of information on field response, gave similar expectations. (Costley and Lucas) In addition, they expect increases in (a) the effect of recreation on management practices for other forest resource products; (b) planning jointly with other recreation-management agencies; (c) vocal pressures for special recreation uses such as snowmobiles or trail bikes; (d) manipulation of the landscape, and (e) sharpened roles of governmental and private recreation facilities. They also feel strongly that the forester must create a "climate of opinion" within which the public will let him operate in response to their desires and to the technical needs of resource management.

10. Recommended changes in college education: Replies from Districts and Forests were so diverse that they cannot be summarized. However, individual suggestions may be of some use and have been incorporated in the outlines for the courses.

The jobs in recreation management were reviewed in the light of information obtained above and ranked in terms of relative

need for improvement in education for job performance. Ranking was based equally on these criteria: (a) importance of job to mission of recreation management, (b) troublesomeness to managers' recommendations for additional preparation in college, and (d) time allocated to function within which job occurs. The resulting job rankings are shown in Appendix G.

Ranger District jobs ranking highest in need for additional education were training and supervision of personnel, site protection, control of overuse and congestion, coordination of recreation with administration for other uses, and evaluation of the impact of recreation on other resource uses.

Recurrent jobs at Supervisor level were most critical in areas of coordination of management plans and objectives for the various resources, ensuring proper administration of near-natural areas, setting management standards and objectives, advising Districts, and planning and conducting surveys of the impact of recreation on other resource uses, and vice-versa. Project jobs for which educational changes are most needed involve planning for development of recreation areas and sites, sampling of recreation use, checking compliance on recreation development contracts, and fee administration at developed sites.

DISCUSSION

Limitations of the study:

(a) Development of education for recreation management must remain an individual matter. Each educator will incorporate the job characteristics in recreation management with his own philosophy of education and of recreation, and place these within a framework which seems most reasonable to him according to his own education and experience. The concepts, information, and skills needed to perform the identified jobs are difficult to specify completely. Opinions in this regard may vary considerably among educators and managers, as will the techniques used to motivate and to communicate with his students. Therefore, I have emphasized the "hard data" of job needs and will minimize my own interpretation of these data into course objectives and outlines.

(b) My professional preparation did not include formal study of education; this study would have been strengthened if relevant skills had been easily accessible. Unfortunately, such was not the case. However, the hard data provided by the study may be used by educational specialists as a basis for further recommendations on course development.

(c) Since wildland recreation is a new and integrative field, theory is now under development. This study, with its conclusions and recommendations, should be regarded chiefly as something to build upon and to change as our knowledge of this field advances.

Philosophy of the courses: The objectives of education are generally stated as the preservation, transmission, and improvement of our cultural heritage. (Dressel:20) In terms of a group of courses in wildland recreation management, our "cultural heritage" would be composed of (a) the recreation opportunities available in natural, cultural, and historical resources and the developments to enhance them, (b) the nature of recreation and its influence on individual lives and the society, and (c) the effects of management on recreation opportunities and the recreation experience.

Satisfaction of these objectives can be evaluated best in terms of the graduate's behavior on the job. If he can excellently perform the jobs we have analyzed previously, we can say that his technical education was probably also excellent.

How can we develop an educational program that can produce such excellence? Again, behavior of the young professional -- this time in his student status -- must be the focus of our effort. Doll has shown the progression of student behavior toward which any truly educational program should be aimed: developing interests, developing appreciations, creating awareness of values and developing them for personal use, improving knowledge, improving intellectual skills, and improving the quality of thinking. (Doll:112)

Specialization always poses a problem in curriculum planning. Most education theorists, as well as teachers of forestry and wildland recreation management, believe that the undergraduate curriculum should primarily prepare a student to be a generalist in resource management. Specialization can be initiated through a few courses in the junior or senior years, but in-depth specialization should be postponed until the graduate years. (Brockman; Spurr; NAS:13; Fraser 62:89-91, Merriam)

Learning is apparently easiest when tied to a simple but strong structure of fundamentals (concepts, relationships, etc.) (Doll:80; Fraser 63:25) The smaller concepts may change as we learn more, but the larger ones seldom, if ever, change. (Doll:81)

Planning for an option of courses in wildland recreation management involves the selection of educational activities, and the organization of those activities. (Dressel:31-32) In essence, the teacher should plan to (a) "provide analytic simplification" of myriad particulars of a discipline through generalizations, classifications, etc., (b) "provide synthetic coordination" of particulars through demonstration of patterns and relationships, and (c) assure a "lure to discovery" by the student of many of the basic concepts and ideas of the field. (Doll:83)

Both subject-matter and process are important--that is, the means of learning and of finding information may be at least as important as what is actually learned. (Doll:83,94) When faced with a management problem, the student must know which concepts or information can help and where to find them. The National Academy of Sciences--National Research Council has provided some recommendations concerning the concepts and information which should be included in the education of foresters: (NAS:7-9)

Additional training in outdoor recreation, natural beauty, and the sociological aspects of recreation management

A multiple-use management framework

A "common core of topics or principles in natural resource science"

Avoidance of "narrow technical training"

Emphasis on broad training through education in scientific principles rather than on existing practices.

Educators usually organize subject matter and learning experiences in terms of sequence, continuity, and integration. (Dressel:31-32) Briefly, sequence concerns itself with the order in which information and skills are tied together. Continuity may be accomplished by following a structure that is easily grasped by the students, and by practice and reinforcement in the use of materials learned. Integration is attained by relating subject matter to fields outside the major discipline or course, showing how the discipline fits into the larger picture of the society, etc.

The student's learning process and awareness usually develop in three stages: (Whitehead, in Fraser 63:28)

- (a) "romance," in which the student perceives phenomena in terms of his own experience, and in which relationships are incompletely and imaginatively conceived in terms of his own experience.
- (b) "precision," in which the student is able to develop ways of selecting, ordering, analyzing and organizing phenomena. At this stage he may conduct trial-and-error experiments either concretely in the field or through simple mental experiments.
- (c) "generalization," in which he can order newly-discovered facts and ideas, and develop further on such generalizations and concepts. According to Russell, this "conceptualizing makes possible rational behavior--exploring, ordering, solving, creating, and predicting." (Russell, in Fraser 63:29)

These three stages of the learner's development can be used in teaching wildland recreation management. For example, we can:

- (a) appeal first to the impulses, through reference to the student's own enjoyment of wildland recreation

or other recreational experiences (romance stage);

- (b) become analytical through application of related knowledge from the behavioral sciences, biological sciences, etc., through experiments, and through class exercises involving such knowledge (precision stage);
- (c) encourage research into reasons for visitor behavior, plan for the development of recreational opportunities, etc. (generalization stage).

Organization of materials within the courses and option should be guided by the student's learning process to the greatest extent possible without creating an unsatisfactory distortion of subject matter per se.

RECOMMENDATIONS

In terms of subject content, the wildland recreation field must clearly develop into 3 major bundles: resources from which recreation opportunities are derived, visitors and their recreation activities, and the management activities that form a bridge between recreational desires of the people and the resources providing the opportunities. I believe that these bundles of subject matter can best be represented by examining the field of wildland recreation management in a problem-solving context. Educators also believe that this context serves learning. (Foster 63:8,9,23) Wildland recreation management presently has no theory of its own; it integrates concepts and information from many fields for application in the solution of management problems. As such, its only claim to significance is its ability to synthesize concepts and information from other fields into a problem-solving context.

A structure for subject-matter of wildland recreation management: The usefulness of an easily-remembered structure of subject content in aiding comprehension, recall, and rapid learning of principles and theories has been discussed earlier. (Foster 63:23) Ideally, this structure should be (a) characterized by simplicity and logical clarity; (b) developed from the major concepts and related knowledge useful in the field; and (c) related to the learner's experience, background, and maturity. (Foster 63:23,24)

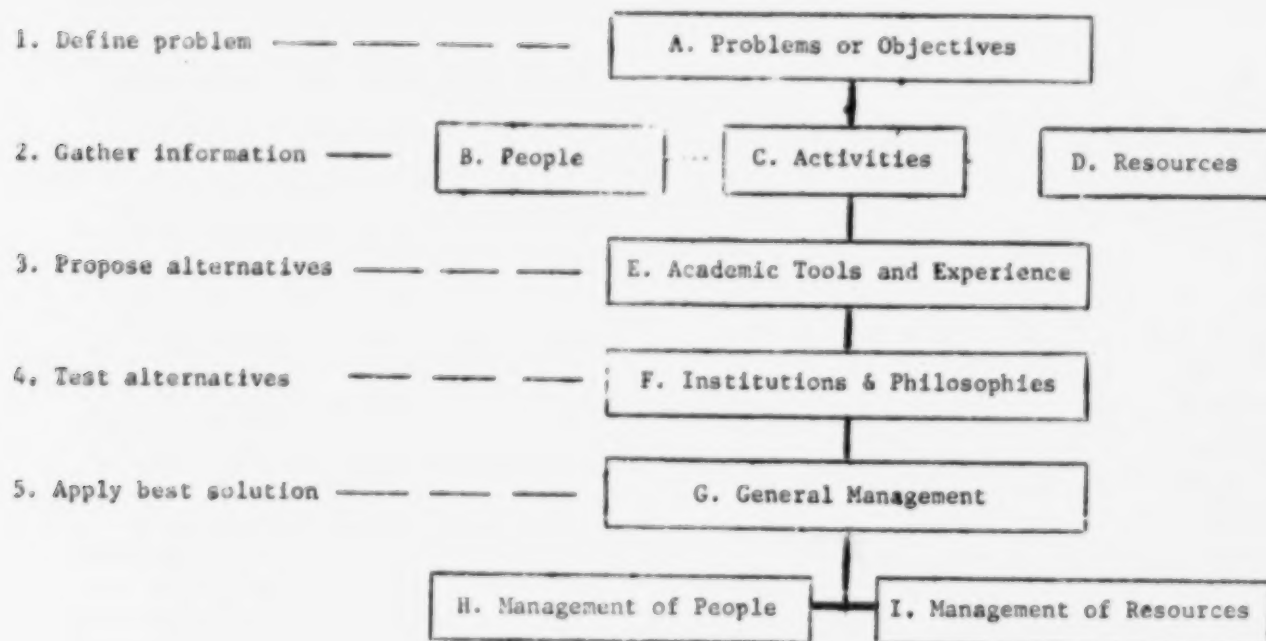
I have developed a structure that satisfies the first two criteria, and may be adapted to satisfy the third. This structure is a blending of the problem-solving process (Dewey) and the related major blocks of information from wildland recreation management. (Figure 2) Simplicity is shown through only 3 stages of the problem-solving process and 9 classes of knowledge about wildland recreation management. Information and concepts contained in each of the 9 classes are presented in Appendix B, which is intended to be illustrative rather than exhaustive.

Other structures could be organized with equal or superior validity. Each person concerned with recreation management could develop a structure having maximum utility in terms of his own education, experience, and perception of recreation management. However, let's consider this particular structure from the educational viewpoint of sequence, consistency, and integration. (Foster:31-32)

The sequence of materials in an introductory, survey-type course on wildland recreation management can be easily tied to the

PROBLEM-SOLVING*

WILDLAND RECREATION MANAGEMENT



*Adapted from Dewey, John S., How We Think

Figure 2. Structure for Concepts in Wildland Recreation Management

problem solving process. (Appendix I, Course #1) For example, the student first learns about the objectives of wildland recreation management, and the problems normally associated with such management. Next, he learns about the primary information needed to work with such problems or objectives -- the nature of the resource, the visitor and his experience, and the recreation activities. This is followed by a short but intensive session pointing out the usefulness of information from many disciplines -- and from experience -- in pointing out alternative solutions to the problem or alternative ways of reaching the objective. These solutions are then tested by knowledge of the institutions of our society and the philosophies of employers and interest groups, which act as constraints to locate unacceptable solutions. Finally, the solution which seems clearly "best" in view of the tests can be applied, and it is here that the student learns most about the details of on-the-ground management. However, this last stage can still be conceptual and stress principles and concepts rather than applications. I have used this sequence for seven semesters and found that student comprehension and interest are satisfactorily high.

Continuity of organization is assured by introducing and explaining the structure at the beginning of the semester, and by referring to the structure whenever a new block of material is initiated. Practice and reinforcement occur without further planning, because the student must use information and concepts obtained in earlier portions of the course whenever problems or discussions arise.

Integration of wildland recreation with other fields occurs primarily through the selection of alternative solutions to the problem or objectives. The student is encouraged to use all he knows from other fields such as social sciences (psychology, sociology, public relations), earth sciences (geology, soils), humanities and the arts (aesthetics, literature), the applied arts (design, landscape architecture, etc.), biological sciences (forestry, wildlife management, zoology), etc.

Such placement of instruction in the problem-solving organization tends to minimize rote memory and to increase the usefulness of concepts in their application to field problems. It also permits the student to progress rather naturally in the use and organization of knowledge -- "to see interrelationships, and achieve unity from the diversity of knowledge." (Fraser 63:225)

Individual courses in wildland recreation management: The basic structure of forestry curricula has not been under question

in this study. Nor have I attempted to provide a curriculum in wildland recreation management, which would be attractive because greater depth could be provided in the social sciences, planning, and other fields especially supportive of recreation management. Instead, my chief concern has been the design of courses to strengthen the forester's preparation for recreation management without sacrificing his preparation for other aspects of forest management.

Building on the generalized philosophy of education for wildland recreation management presented above and summarized on appendix page I-1, I've proposed four courses in this field:

1. Introduction to Wildland Recreation Management
2. Management for Recreation Visitors
3. Planning for Recreation Resource Development
4. Seminar in Wildland Recreation Management

The introductory course is broad and emphasizes principles and concepts. Because most foresters will now need some knowledge in recreation management (Dana and Johnson:283), it is recommended as a required course. The other three courses would be elective.

The basic details for each course-objectives, scope, format, and prerequisites -- are shown in Appendix I. In general, these are self-explanatory and need not be discussed here.

Course outlines are also presented in Appendix I. These reflect the topics for coverage at each class session during the semester. The content of these sessions would be more understandable if outlines or concepts associated therewith were presented. Regrettably, such detail is beyond the limits of this report. However, I expect to incorporate it in an expanded report to be issued through the Texas Agricultural Experiment Station during 1969.

Some apparent overlap will be noticed among the courses. This simply indicates a deepening of knowledge, skills, and techniques beyond the introductory course, which must be broad but shallow because it alone would be required. Students who plan to emphasize recreation management during their careers will need the additional depth provided in the specialized courses in visitor management and in planning.

Supporting courses: These four courses in wildland recreation management cannot, obviously, provide the full range of knowledge and skills needed. Many other courses now usually found in forestry curricula contain concepts, information, or skills that can best be taught therein rather than in the recreation management courses. For example, courses in mensuration provide techniques that can be used in sampling recreational use and visitors. Other courses now being proposed for addition to forestry curricula can also provide much help to the recreation manager. The social sciences are the best example. Support courses such as these are suggested in Appendix J.

Major criticisms: Several strong alternatives or objections were raised by the reviewers. In brief, these can be stated and answered as follows:

(a) The forestry curriculum should not become further diluted through inclusion of these courses: Granted, limited time is available. However, these courses are intended to be elective except for the introductory course.

(b) The four courses provide inadequate time and education for the job of recreation management: This is the reverse criticism of (a). Separate curricula in forest recreation management could be written and could incorporate such desirable features as emphasis on social sciences. However, the courses designed herein are intended to provide some depth in recreation management while retaining the features of a general education in forestry.

(c) Courses are too eclectic--that is, they provide too little background for in-depth understanding of the principles on which they are based: Again, the criticism is valid but must be accepted if the student is to attain some depth in recreation management without sacrificing general forestry. The best compromise to the above criticisms seems to be a "split major" involving a 5-or 6-year program from which the student would emerge with a liberal arts degree and a professional degree. However, the present state of the market for foresters seems to advise against this solution.

(d) Much of the information to be gained can be had from existing courses in other departments: True, but such information would not be directed specifically to solution of recreation management problems -- and many more courses would be required in order to gain the best mix of knowledge and skills for use in recreation management.

SUMMARY

This study has attempted to discover the most useful materials for presentation in wildland recreation management courses. This has been approached in the context of undergraduate education for future managers of wildlands in the multiple-use setting.

The nature of the recreation management job on western National Forests has been investigated and described. This has been combined with philosophies, theories, and knowledge from general education, recreation, and wildland recreation management as revealed by the literature and by contacts with educators in wildland recreation management. From this has emerged a structure for the subject content of wildland recreation management. Combining all of these, I have presented an educational philosophy and preliminary details for a series of four courses in wildland recreation management. Additional details of course recommendations will be contained in a longer report expected to appear during 1969 as a publication of the Texas Agricultural Experiment Station.

I hope that this report will provide a useful bench-mark, and that the proposals herein will serve to stimulate further thought on the development of courses in this field of education.

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APPENDIX A

**Sample Units: Forest Service Administrative Units, Other Federal Units,
Educational Materials, and Educators Consulted**

Region	Forest	Plantlet	State
1: Northern	Sitka Spruce Flathead Callisto	Tanager Condor Sequoia	Alas. Mont. Wash.
2: Rocky Mountain	Arapaho Shoshone White River	Clear Creek Wapiti Aspen	Calif. Wyo. Colo.
3: Southwestern	Coronado Santa Fe Tonto	Santa Catalina Jones Mesa	Ariz. N. Mex. Ariz.
4: Intermountain	Teton Toiyabe Wasatch	Buffalo Bridgeport Kanas	Wyo. Nev. Utah
5: California	Inyo Sierra Stanislaus	Harmon Bass Lake Summit	Calif. Calif. Calif.
6: Pacific Northwest	Beschta Mt. Hood Wenatchee	Band Zigzag Lake Wenatchee	Ore. Ore. Wash.

EDUCATIONAL MATERIALS AND RESEARCH COMMITTEE

WESTERN

Institution	Department or School	Editor
Arizona, U. of	Waterland Mang'l.	* Dr. David A. King
British Columbia, U. of	Forestry	J. Barry Smith--W.D. Gilman
Calif., Berkeley State College	Div. of Nat. Res.	* W.F. Marion
Calif., Sacramento State College	Park Management	B. Stewart Headlock
Calif., San Jose State College	Recreation Mang'l.	* J.B. Zandy
Calif., State College, Hayward	Recreation	E.W. Hiepoth
Calif. State College, Long Beach	Recreation	David Gray
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Idaho, U. of	Forestry	H. Alden
Montana State U.	Forestry	
Oklahoma State U.	Forestry	* J. Lamar Toste
Oregon State U.	Forestry	W.F. McCulloch
Texas, Stephen F. Austin State College	Forestry	Eugene Hastings
Texas A&M U.	Recreation & Parks	* Leslie E. Reid
Texas Technological College	Park Administration	
Utah State U.	Natural Resources	* John D. Hunt
Washington, U. of	Forestry	* C. Frank Reimann

SOUTHERN

Illinois, Southern Illinois U.	Forestry	* Dwight E. McCurdy
Florida, U. of	Forestry	* E. Robert Delaford
Louisiana State U.	Forestry & Wildlife Management	* Robert W. McDonald
Massachusetts, U. of	Park Administration	
Michigan, U. of	Forestry	* Grant V. Sharpe
Minnesota, U. of	Forestry Geography	* L.C. Merriam, Jr. * Robert C. Lucas
New York State College of Forestry	Land-use Arch. Forestry	* Harry G. Williams, Jr. * William E. Bush, Jr.

Supplementary Table 1.

Table 1.

Director & Deputy	James A. Smith, Jr.
Director & Deputy	James A. Smith, Jr.

* Activities are evaluated preliminary objectives and activities for various

Supplementary Table 1: Federal Activities under U.S. Forest Service

Agency	Director/Deputy	Title
Bureau of Land Management	Michael E. Douglas	Assistant Director, Planning
Bureau of Indian Affairs	Michael E. Douglas	Assistant Regional Director, San Francisco
Office of Engineering	Michael E. Douglas	Chief, Environmental Resources, San Francisco
	Michael E. Douglas	Chief, Environmental Resources, San Francisco
National Park Service	Michael E. Douglas	Special Assistant to the Director, Washington, D.C.

Supplementary Table 1: Federal Activities under U.S. Forest Service

APPENDIX B

Questionnaire and Covering Letter

(Northern Arizona University Letterhead)

July 4, 1967

2300 (6141)

Supervisor, Bitterroot National Forest
U.S. Forest Service
316 N. 3rd Street
Hamilton, Montana 59840

Attn: Recreation Staff Assistant

Dear Mr. Nousianea:

Will you help us develop better training for your future recreation managers?

Your Forest has been selected and cleared by the Regional Office for sampling of the recreation management job, and for your opinions on college preparation for a career of recreation management in the Forest Service.

This research is being conducted under contract with the U.S. Office of Education; results will be directed to all western schools of forestry or natural resource management.

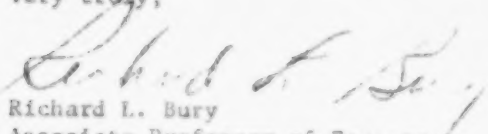
The enclosed form should require about an hour to complete. All questions can be answered by check-marks or a short phrase. No data are required.

Your carefully-considered opinions are very important; your Forest is one of only 18 selected from Regions 1-6 for response. Results will be available to all western schools of land management.

Please return the form in the enclosed, self-addressed envelope by July 24.

Your cooperation is sincerely appreciated.

Very truly,


Richard L. Bury
Associate Professor of Forestry

(Klamath National Forest, 1958-1960)
(Pacific Southwest Station, 1960-1964)

RLB/ak

Enclosure

COLLEGE PREPARATION FOR RECREATION MANAGEMENT IN THE U.S. FOREST SERVICE

Northern Arizona University and U.S. Office of Education

Dr. R. L. Bury, School of Forestry, N.A.U.

Project Leader

Gentlemen:

As educators, we need your opinions concerning the best type of college education for improving the on-the-job performance of graduates who will soon be recreation managers in the Forest Service.

We would like to combine your opinions with those of men who now teach classes in forest recreation management at the Western universities. From this combination, we will design outlines for a set of 3 or 4 courses which could help to prepare students for a career of recreation management in the Forest Service. The outlines will be sent for your opinions during the coming winter.

Kindly answer the questions below from the standpoint of the professional in charge of recreation management on your *. Your replies will be kept confidential; please answer honestly. We are genuinely seeking your opinion concerning forest recreation management, rather than support for any ideas that we or the Forest Service may have.

-
1. Should a * recreation manager have been educated as a
- a: general resource manager
 - b: forest recreation specialist
 - c: general resource manager with a minor in recreation management

(circle the letter of your choice)

2. Assume that he has chosen a program like (c) above, and will have only 3 or 4 courses in forest recreation management. What portion of his instruction in those courses should be basic concepts and theory (for example, similar to FSM), and what portion should be instruction in field application (similar to FSH)? Indicate by placing a check-mark on the scale below.

-----	-----	-----
100%	50% theory	100%
theory &	50% applications	applications
concepts		

3. Rate the average * recreation professional as High, Medium, or Low in these capabilities:

----- Basic professional knowledge of recreation management

----- Understanding of professional knowledge of recreation management

----- Application of professional recreation knowledge to problems of recreation administration

----- Analysis of problems in recreation administration

----- Planning and programming for recreation administration

----- Evaluation of performance of District Personnel and of forest users (permittees, contractors) according to USFS guidelines

(* "District" or "Forest" was inserted, as relevant)

4. The attached list describes 43 basic jobs that usually occur during recreation administration in * . This list has been derived from your Recurrent Workload Analysis for Recreation Management, a statistical series used to help determine your recreation budget.

On the left side of the job lists, please check each job as High, Medium, or Low in importance to the success of recreation management on National Forests. Do not base your rating on the amount of time required for each job. Try to rate the jobs on a "normal statistical curve"; use High and Low ratings sparingly.

5. On the right side of the same job list, check those jobs you have found to be especially troublesome, either because of their own complexity or because assigned personnel often seem poorly prepared to deal with them. Try to check no more than 20 jobs.

6. Now reconsider only the jobs you have check-marked above. Place a circle around the check-mark of those troublesome jobs for which you feel students should be prepared in college rather than through in-Service training.

For each check-circled job, write below its description the subjects, concepts, or skills that should be taught to overcome the difficulty. (You may wish to consult the list of subjects on page 4 of this form for ideas.)

7. List below the concepts, information, or skills that you believe would be most useful in dealing with recreation management problems today. Use back of this sheet if you need more space. (Again, you may wish to use the list on page 4 for ideas.)

8. List below the trends you foresee in the types of (a) recreation activities, and (b) visitor and installed equipment that will be desired or found on Forest Service areas during the next 10 years.

Recreation Activities

Visitor or Installed Equipment

(* "Ranger Districts" or "Supervisor's Offices" was inserted, as relevant)

9. In what specific ways do you expect the recreation management and policies of the Forest Service to change in response to recreation activities, visitor equipment, and other factors?

10. What changes in college education would you recommend to meet the changes you expect in visitor use and Forest Service management of recreation areas and sites?

a. Concepts, skills, or subjects which will be now or should be strengthened

b. Concepts, skills, or subjects which should be eliminated or de-emphasized

Again, thank you for your cooperation.

Please return this form and job list in the enclosed envelope.

Person completing this form _____

Title _____

EXAMPLES OF SUBJECTS, CONCEPTS, AND SKILLS

Biological Sciences

Botany
Zoology
Forestry
Wildlife management
Ecology

Social Sciences

Sociology
Psychology
Social psychology
History
Recreation

Earth Sciences

Geology
Soils

Government

Political science
Public administration
Law

Business Management

Personnel management
Financial management
Economics
Business administration

Applied Arts

Aesthetics
Landscape architecture
Architecture

Engineering

Civil engineering
Sanitary engineering
Hydraulic engineering

Information Sources

Bibliographies
Indexes
Journals
Libraries
Statistical series

Information Processing

Statistics
Electronic data
processing

Integrative Fields

Geography
Conservation
Regional planning
Decision theory
Conflict resolution

Techniques

Estimation of use
Measurement of use
Surveys
Valuation of recreation
Aerial photo interpretation

Concepts

Multiple-use management
Preservation of near-natural areas
Relative dominance among resource uses

RANGER DISTRICT STAFF, U.S. FOREST SERVICE

Importance		Especially Troublesome
	1. Familiarize self with recreation areas and sites	
	2. Inventory recreation resources of potential and existing development sites	
	3. Collect data for routine reports	
	4. Process data for routine reports	
	5. Post data and information on recreation plans and records	
	6. Compose routine reports	
	7. Secure approval by higher officials of plans submitted by permitted or contractors	
	8. Inform in-Service and cooperating agencies of routine information concerning recreation administration	
	9. Train personnel in recreation administration	
	10. Be trained in recreation administration and other functions	
	11. Discuss management of Forest resources with recreation visitors	
	12. Operate and maintain recreation areas and sites	
	13. Protect site resources of recreation areas and sites	
	14. Protect public health and safety, especially on developed sites	
	15. Protect landscape immediately adjacent to development sites	
	16. Control unauthorized use of recreation areas and sites, especially near-natural areas	
	17. Control over-use and congestion	
	18. Control insects and disease	
	19. Control wildlife conditions	
	20. Control fire problems	
	21. Supervise employees concerned with recreation administration (including inspections)	
	22. Ensure administration in compliance with established standards	
	23. Survey administrative needs of recreation management, and recreation as compared with needs of other forest uses	

2. Forest District

<u>H.M.</u>	
	24. Prepare data for recreation plans, recreation special uses, etc. _____
	25. Apply principles and procedures in administration of undeveloped recreation sites _____
	26. Enforce contracts on special-use permits, recreation residences, etc. _____
	27. Promote cooperation between Forest Service and other suppliers of recreation opportunities _____
	28. Solve cooperative problems occurring commonly on recreation areas managed by the Forest Service and by other agencies _____
	29. Resolve conflicts concerning use of areas on which recreation occurs _____
	30. Analyze conflicts concerning use of areas on which recreation occurs _____
	31. Coordinate recreation administration with other uses of resources _____
	32. Determine needs for development, operation, and maintenance of recreation facilities _____
	33. Develop standards for the development, operation, and maintenance of recreation areas and sites _____
	34. Plan for the development, operation, and maintenance of recreation areas and sites (National Forest Recreation Management Plan) _____
	35. Coordinate recreation management on Forest lands with that on lands or with other agencies through cooperative agreements _____
	36. Inspect government-operated recreation areas and sites for compliance with established administrative guidelines _____
	37. Inspect recreation special uses and concession-operated areas and sites for compliance with established administrative guidelines _____
	38. Evaluate the impact of recreation on other resource uses, and vice-versa _____
	39. Evaluate government-owned recreation sites for concession operation _____
	40. Evaluate the future of each recreation special use _____
	41. Evaluate the construction plans for recreation residences _____
	42. Re-evaluate and revise recreation plans _____
	43. Re-evaluate and comment on revision of recreation special uses _____

RECREATION MANAGEMENT JOBS
FOREST SUPERVISOR STAFF, U.S. FOREST SERVICE

Importance		Especially Troublesome
	1. Guide official visitors to key managers or projects	
	2. Inform District personnel of current developments, and Regional personnel concerning progress and findings	
	3. Compose routine letters and reports	
	4. Encourage cooperation with organizations interested in use and management of Forest resources	
	5. Cooperate with public and private organizations interested in outdoor recreation	
	6. Inform self of current developments in recreation activities and management	
	7. Train Forest and District personnel in recreation administration	
	8. Combine reports from Districts to Forest total	
	9. Maintain National Forest Recreation Management Plan	
	10. Advise District personnel in recreation administration	
	11. Supervise District personnel in recreation administration	
	12. Follow up on actions specified by Regional Forester	
	13. Plan field training seminars for solution of management problems	
	14. Participate in surveys planned by Regional Office	
	15. Instruct Rangers regarding necessary administrative studies	
	16. Plan and conduct surveys of the impact of recreation on other Forest uses, and vice-versa	
	17. Approve special-use permits when application is in accordance with policy	
	18. Ensure administration of near-natural areas according to dedication	
	19. Analyze recreation reports for the Forest as a whole	
	20. Comment on reports forwarded to Regional Office	
	21. Coordinate records of Districts with those of Forest	
	22. Coordinate recreation plans with those of other agencies to avoid duplication or oversupply of facilities	

Forest Supervisor - 1

H M L	
	23. Coordinate such matters as (a) District plans and programs, (b) recreation use permits with other Forest uses before approval, or (c) maintenance of recreation improvements on the Forest _____
	24. Coordinate surveys and studies _____
	25. Coordinate management plans and objectives for the various resources _____
	26. Furnish skills to Districts for development of maintenance plans _____
	27. Advise Districts in preparation and revision of recreation special use permits (winter sports areas, etc.) _____
	28. Revise National Forest Recreation Management Plan _____
	29. Prepare permits for recreation uses such as privately-owned camps and resorts and winter-sports concessions _____
	30. Revise permits for concession management of government-owned facilities _____
	31. Develop standards for administration of recreation resources such as undeveloped recreation sites and swimming sites, and for operation of facilities operated under recreation special use permits _____
	32. Set management objectives for use in development of recreation plans _____
	33. Plan various programs for recreation administration such as training sessions, administrative studies, and impact surveys _____
	34. Revise policies of recreation administration as directed and guided by Regional Office _____
	35. Review District actions in recreation administration such as reports, special use applications, maintenance plans, etc. _____
	36. Evaluate and comment to Districts and to Regional Office on recreation reports, requests for restriction of occupancy and use, etc. _____
	37. Evaluate appeals on recreation special use permits by permittees _____
	38. Revise special use permits as advisable in response to requests _____
	39. Inspect District recreation administration, in cooperation with personnel of Regional and Washington Offices _____
	40. Determine need for formal administrative studies _____
	41. Evaluate the administration of near-natural areas, undeveloped recreation sites, and developed recreation sites _____

PROJECT WORK FOR RECREATION MANAGEMENT
FOREST MANAGEMENT TEAM, U.S. FOREST SERVICE

Recreation Management			Specific Task/Action
<u>Planning</u>			
		1. Prepare area development plans	_____
		2. Prepare site development, improvement, or rehabilitation plans	_____
		3. Prepare interim management prescriptions for potential sites listed in National Forest Recreation Management Plan (NFRMP)	_____
		4. Mark boundaries of potential areas and sites	_____
		5. Maintain portions of Sections II, III, and IV of the NFRMP	_____
		<u>Construction</u>	
		6. Construct developments under Forest Account Funds (20 personnel)	_____
		7. Check compliance with contract provisions on developments constructed by contractors	_____
		8. Submit "As Built" site plans on all sites as completed	_____
		9. Rehabilitate or improve existing facilities	_____
		<u>Reclassification of Area Management</u>	
		10. Reclassify specific areas for management under different objectives (for example, wilderness)	_____
		11. Study areas proposed for reclassification	_____
		12. Prepare informative brochure for reclassification proposal	_____
		13. Participate in public hearing on reclassification proposal	_____
		14. Prepare final reclassification report after hearing	_____
		<u>Maintenance of Recreation Areas and Sites</u>	
		15. Prepare maintenance and operation plans	_____
		16. Clean up and maintain recreation areas and sites	_____
		<u>Administration of Improved Recreation Areas and Sites</u>	
		17. Prepare rules for visitor activities on improved areas and sites	_____

Human Resources - Project - 2

17.	a.	b.	<u>Address the following questions:</u>	
18.	a.	b.	18. Administration fees in accordance with Land and Water Conservation Fund Act (collect and check compliance)	_____
			18. Review compliance plans for administration of Land and Water Conservation Fund Act	_____
19.	a.	b.	<u>Cooperation</u>	
			19. Inform interested agencies and groups of the BLM to assess cooperation of development for local economic needs	_____
20.	a.	b.	<u>Administrative Review</u>	
			20. Mapping of recreation use by administrative and environmental techniques	_____
21.	a.	b.	21. Summary of facilities and conditions	_____

APPENDIX C

Perceived Importance of Recreation Management Jobs

PERMUTIVE IMPORTANCE
RECURRENT RECREATION MANAGEMENT JOBS
RANGER DISTRICT STAFF, U. S. FOREST SERVICE

Rank	Score	Job	Job #
1	14	<u>Train</u> personnel in recreation administration	9
2	11	<u>Operate and maintain</u> recreation areas and sites	12
3	10	<u>Be trained</u> in recreation administration and other functions	10
4	10	<u>Supervise</u> employees concerned with recreation administration (including inspections)	21
5	9	<u>Protect public health and safety</u> , especially on developed sites	14
6	8	<u>Resolve conflicts</u> concerning use of areas on which recreation occurs	29
7	8	<u>Analyze conflicts</u> concerning use of areas on which recreation occurs	30
8	8	<u>Determine needs</u> for development, operation, and maintenance of recreation facilities	32
9	8	<u>Protect site resources</u> of recreation areas and sites	12
10	7	<u>Familiarize self</u> with recreation areas and sites	1
11	7	<u>Control over-use</u> and congestion	17
12	6	<u>Coordinate recreation administration</u> with other uses of resources	31
13	5	<u>Control unauthorized use</u> of recreation areas and sites, especially near-natural areas	16
14	5	<u>Evaluate the impact of recreation</u> on other resource uses, and vice-versa	38
15	4	<u>Discuss management</u> of Forest resources with recreation visitors	11
16	4	<u>Develop standards</u> for the development, operation, and maintenance of recreation areas and sites	33
17	3	<u>Inventory recreation resources</u> of potential and existing development sites	2
18	3	<u>Ensure administration</u> in compliance with established standards	22
19	3	<u>Survey administrative needs</u> of recreation management, and recreation as compared with needs of other forest uses	23

20	3	<u>Enforce contracts</u> on special use permits, recreation residences, etc.	26
21	3	<u>Plan</u> for the development, operation, and maintenance (NFRMP)	34
22	2	<u>Protect landscape</u> immediately adjacent to development sites	15
23	2	<u>Prepare data</u> for recreation plans, recreation special uses, etc.	24
24	2	<u>Apply principles and procedures</u> in administration of undeveloped recreation sites	25
25	2	<u>Inspect recreation special uses</u> and concession-operated areas and sites for compliance with established administrative guidelines	37
26	2	<u>Evaluate the future</u> of each recreation special use	40
27	2	<u>Re-evaluate and revise</u> recreation plans	42
28	1	<u>Control insects and disease</u>	18
29	1	<u>Control fire</u> problems	20
30	0	<u>Post data and information</u> on recreation plans and records	5
31	0	<u>Solve cooperative problems</u> occurring commonly on recreation areas managed by the Forest Service and by other agencies	28
32	0	<u>Inspect</u> government-operated recreation areas and sites for compliance with established administrative guidelines	36
33	-1	<u>Compose routine reports</u>	6
34	-1	<u>Coordinate recreation management</u> on Forest lands with that on other lands or with other agencies through cooperative agreements	35
35	-1	<u>Re-evaluate and comment</u> on revision of recreation special uses	43
36	-2	<u>Promote cooperation</u> between Forest Service and other suppliers of recreation opportunities	27
37	-3	<u>Collect data</u> for routine reports	3
38	-3	<u>Process data</u> for routine reports	4
39	-3	<u>Secure approval by higher officials</u> of plans submitted by permittee contractors	7
40	-4	<u>Inform</u> in-service and cooperating agencies of routine information concerning recreation administration	8

41	-4	<u>Evaluate the construction plans for recreation residences</u>	41
42	-6	<u>Evaluate government-owned recreation sites for concession operation</u>	39
43	-8	<u>Control wildlife conditions</u>	19

Derivation of Score. Item 4 of the questionnaire asked managers to rate their jobs as "High, Medium, or Low in importance to the success of recreation management on National Forests. Do not base your rating on the amount of time required for each job. Try to rate the jobs on a 'normal statistical curve'; use High and Low ratings sparingly."

Ratings for each job were scored by assigning the following weights: High +1, Medium 0, Low -1. Score is the algebraic sum of the tallied ratings.

Job #. Refers to the job as numbered on the questionnaire.

PERCEIVED IMPORTANCE
RECURRENT RECREATION MANAGEMENT JOBS
FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Rank</u>	<u>Score</u>	<u>Job</u>	<u>Job #</u>
1	13	<u>Coordinate management plans and objectives</u> for the various resources	25
2	12	<u>Coordinate</u> such matters as (a) District plans and programs, (b) recreation use permits with other Forest uses before approval, or (c) maintenance	23
3	11	<u>Inform self</u> of current developments in recreation activities and management	6
4	11	<u>Train</u> Forest and District personnel in recreation administration	7
5	11	<u>Ensure administration of near-natural areas</u> according to dedication papers, management plans, and policy statements	18
6	11	<u>Set management objectives</u> for use in development of recreation plans	32
7	10	<u>Evaluate the administration</u> of near-natural areas, undeveloped recreation sites, and developed recreation sites	41
8	7	<u>Inform District personnel</u> of current developments, and Regional personnel concerning progress and findings	2
9	7	<u>Advise District personnel</u> in recreation administration	10
10	7	<u>Coordinate recreation plans</u> with those of other agencies to avoid duplication or oversupply of facilities	22
11	7	<u>Advise Districts</u> in preparation and revision of recreation special use permits (winter sports areas, etc.)	27
12	7	<u>Review District actions</u> in recreation administration such as reports, special use applications, maintenance plans, etc.	35
13	6	<u>Prepare permits</u> for recreation uses such as privately-owned camps and resorts and winter-sports concessions	29
14	5	<u>Encourage cooperation</u> with organizations interested in use and management of Forest resources	4
15	5	<u>Cooperate with public and private organizations</u> interested in outdoor recreation	5
16	5	<u>Analyze recreation reports</u> for the Forest as a whole	19

17	5	<u>Develop standards for administration of recreation resources</u> such as undeveloped recreation sites and swimming sites, and for operation of facilities operated under recreation special use permits	31
18	4	<u>Coordinate surveys and studies</u>	24
19	4	<u>Plan various programs</u> for recreation administration such as training sessions, administrative studies, and impact surveys	33
20	3	<u>Plan and conduct surveys</u> of the impact of recreation on other Forest uses, and vice-versa	16
21	3	<u>Evaluate and comment</u> to District and to Regional Office on recreation reports, requests for restriction of occupancy and use, etc.	36
22	3	<u>Evaluate appeals</u> on recreation special use permits by permittees	37
23	2	<u>Follow up</u> on actions specified by Regional Forester	12
24	2	<u>Revise National Forest Recreation Management Plan</u>	28
25	2	<u>Revise policies</u> of recreation administration as directed and guided by Regional Office	34
26	1	<u>Furnish skills</u> to Districts for development of maintenance plans	26
27	1	<u>Revise permits</u> for concession management of government-owned facilities	30
28	0	<u>Maintain National Forest Recreation Management Plan</u>	9
29	0	<u>Plan field training seminars</u> for solution of typical management problems	13
30	0	<u>Approve special-use permits</u> when application is in accordance with policy	17
31	0	<u>Revise special use permits</u> as advisable in response to requests	38
32	0	<u>Determine need</u> for formal administrative studies	40
33	-1	<u>Instruct Rangers</u> regarding necessary administrative studies	15
34	-1	<u>Inspect District recreation administration</u> , in cooperation with personnel of Regional & Washington Offices	39
35	-2	<u>Supervise District personnel</u> in recreation administration	11

36	-2	<u>Comment on reports</u> forwarded to Regional Office	20
37	-2	<u>Coordinate records</u> of Districts with those of Forest	21
38	-3	<u>Guide official visitors</u> to key managers or projects	1
39	-3	<u>Participate in surveys</u> planned by Regional Office	14
40	-4	<u>Combine reports</u> from Districts to Forest total	8
41	-5	<u>Compose routine letters and reports</u>	3

Derivation of Score. Item 4 of the questionnaire asked managers to rate their jobs as "High, Medium, or Low in importance to the success of recreation management on National Forests. Do not base your rating on the amount of time required for each job. Try to rate the jobs on a 'normal statistical curve'; use High and Low ratings sparingly."

Ratings for each job were scored by assigning the following weights:
High +1, Medium 0, Low -1. Score is the algebraic sum of the tallied ratings.

Job #. Refers to the job as numbered on the questionnaire.

PERFECTED IMPROVABLE
PROJECT WORK FOR RECREATION MANAGEMENT
FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Rank</u>	<u>Grade</u>	<u>Job</u>	<u>Job #</u>
1	11	<u>Create area development plans</u>	1
2	9	<u>Reclassify specific areas</u> for management under different objectives (for example, wilderness)	10
3	7	<u>Study areas proposed for reclassification</u>	11
4	6	<u>Estimate site development, improvement, or rehabilitation plans</u>	2
5	5	<u>Sampling of recreation use</u> by automatic and semi-automatic techniques	21
6	4	<u>Check compliance</u> with contract provisions on developments constructed by contractors	7
7	4	<u>Clean up and maintain</u> recreation areas and sites	16
8	3	<u>Rehabilitate</u> or improve existing facilities	9
9	3	<u>Prepare maintenance and operation plans</u>	15
10	3	<u>Administer fees</u> in accordance with Land and Water Conservation Fund Act (Collect and Check compliance)	18
11	3	<u>Inform interested agencies and groups</u> of the NFRMP to insure coordination of development for local recreation needs	20
12	3	<u>Inventory</u> of facilities and conditions	22
13	2	<u>Prepare interim management prescriptions</u> for potential sites listed in National Forest Recreation Management Plan (NFRMP)	3
14	2	<u>Construct developments</u> under Force Account funds (FS personnel)	6
15	1	<u>Prepare final reclassification report</u> after hearing	14
16	0	<u>Prepare informative brochure</u> for reclassification proposal	12
17	0	<u>Participate in public hearing</u> on reclassification proposal	13
18	-1	<u>Review compliance plans</u> for administration of Land and Water Conservation Fund fees	19
19	-2	<u>Prepare rules for visitor activities</u> on improved areas and sites	17
20	-4	<u>Maintain portions of Sections II, III, and IV</u> of the NFRMP	5
21	-5	<u>Submit "As Built" site plans</u> on all sites as completed	8
22	-12	<u>Mark boundaries</u> of potential areas and sites	4

Derivation of Scores: Item 4 of the questionnaire asked managers to rate their jobs as "High, Medium, or Low in importance in the process of recreation management on National Forests. Do not base your rating on the amount of time required for each job. Try to rate the jobs on a 'normal statistical curve'; use High and low ratings sparingly."

Ratings for each job were scored by assigning the following weights:
High +1, Medium 0, low -1. Score is the algebraic sum of the tallied ratings.

Job #. Refers to the job as numbered on the questionnaire.

APPENDIX D

Especially Troublesome Jobs in Recreation Management

SPECIALIST PROGRAM
NATIONAL RESEARCH MONITORING AND
ANALYSIS REPORTS, U. S. FOREST SERVICE

Summary

1-1

11 General overview and comparison

- 1 General overview of special-use permits, research permits, etc.
- 2 Permits presented in research administration
- 3 Permits also presented in research areas and sites
- 4 Permits also presented in research on other research areas, and vice-versa
- 5 As related to research administration and other functions
- 6 Summary comparison of research administration (including
management)
- 7 Research permits presented in areas of other research areas
- 8 Comparison of research administration with other areas of research
- 9 Permits also presented in other research areas

1 - 11

11. Revised: Revised by: Approved by: Approved by:

1. Submit administration of recreational areas according to education plans, management plans, and policy statements
2. Coordinate management plans and objectives for the various resources
3. Administer facilities in preparation and provision of recreation special use permits (hunting sports areas, etc.)
4. Develop standards for administration of recreation resources such as undeveloped recreation areas and existing areas, and for operation of facilities opened under recreation special use permits
5. Plan and conduct projects of the impact of recreation on other Forest uses, and vice versa
6. Prepare written reports and reports
7. Coordinate such matters as (a) location plans and programs, (b) recreation use permits when other Forest uses require approval, or (c) maintenance of recreation improvements on the Forest
8. Manage facilities for recreation uses such as privately-owned camps and resorts and other sports accommodations
9. Set management objectives for use or development of recreation plans
10. Coordinate permits on recreation special use permits by permittees
11. Coordinate the administration of non-recreational areas, undeveloped recreation areas, and developed recreation areas

ESPECIALLY TROUBLESOME
PROJECT RECREATION MANAGEMENT JOBS
FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Responses</u>	<u>Job</u>
7	<u>Prepare area development plans</u>
7	<u>Administer fees</u> in accordance with Land and Water Conservation Fund Act (Collect and check compliance)
6	<u>Reclassify specific areas</u> for management under different objectives (for example, wilderness)
6	<u>Study areas</u> proposed for reclassification
4	<u>Rehabilitate</u> or improve existing facilities
4	<u>Clean up and maintain</u> recreation areas and sites
3	<u>Prepare interim management prescriptions</u> for potential sites listed in National Forest Recreation Management Plan (NFRMP)
3	<u>Check compliance with contract provisions</u> on developments constructed by contractors
3	<u>Sampling of recreation use</u> by automatic and semi-automatic techniques

n = 16

APPENDIX E

Especially Troublesome Recreation Management Jobs

for which

Additional College Preparation is Desired

ADDITIONAL COLLEGE PREPARATION DESIRED
RECURRENT RECREATION MANAGEMENT JOBS
RANGER DISTRICT STAFF, U. S. FOREST SERVICE

<u>Responses</u>	<u>Job</u>
7	<u>Train</u> personnel in recreation administration
5	<u>Control over-use</u> and congestion
4	<u>Protect site resources</u> of recreation areas and sites
4	<u>Protect public health and safety</u> , especially on developed sites
4	<u>Supervise</u> employees concerned with recreation administration (+ inspections)
4	<u>Evaluate the impact of recreation</u> on other resource uses, and vice-versa
3	<u>Be trained</u> in recreation administration and other functions
3	<u>Discuss management</u> of Forest resources with recreation visitors
3	<u>Prepare data</u> for recreation plans, recreation special uses, etc.
3	<u>Coordinate recreation with other uses</u> of resources

n = 16

ADDITIONAL COLLEGE PREPARATION DESIRED
 RECURRENT RECREATION MANAGEMENT JOBS
 FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Responses</u>	<u>Job</u>
3	<u>Compose routine letters and reports</u>
3	<u>Plan and conduct surveys</u> of the impact of recreation on other Forest uses, and vice-versa
3	<u>Develop standards for administration</u> of recreation resources such as undeveloped recreation sites and swimming sites, and for operation of facilities operated under recreation special use permits
2	<u>Plan field training seminars</u> for solution of typical management problems
2	<u>Ensure administration of near-natural areas</u> according to dedication papers, management plans, and policy statements
2	<u>Coordinate management plans and objectives</u> for the various resources
2	<u>Advise Districts</u> in preparation and revision of recreation special use permits (winter sports areas, etc.)
2	<u>Set management objectives</u> for use in development of recreation plans
2	<u>Evaluate the administration</u> of near-natural areas, undeveloped recreation sites, and developed recreation sites

n = 17

ADDITIONAL COLLEGE PREPARATION DESIRED
PROJECT WORK FOR RECREATION MANAGEMENT
FOREST SUPERVISOR STAFF, U.S. FOREST SERVICE

<u>Responses</u>	<u>Job</u>
4	<u>Prepare area development plans</u>
2	<u>Sampling of recreation use</u> by automatic and semi-automatic techniques
1	<u>Prepare site development, improvement, or rehabilitation plans</u>
1	<u>Prepare interim management prescriptions</u> for potential sites listed in National Forest Recreation Management Plan (NFRMP)
1	<u>Check compliance with contract provisions</u> on developments constructed by contractors
1	<u>Administer fees</u> in accordance with Land and Water Conservation Act (Collect and check compliance)
1	<u>Inform interested agencies and groups</u> of the National Forest Recreation Management Plan (NFRMP) to insure coordination of development for local recreation needs

n = 16

APPENDIX F

Knowledge and Skills Judged Most Useful in Forest Recreation Management

KNOWLEDGE AND SKILLS JUDGED MOST USEFUL IN FOREST RECREATION MANAGEMENT

<u>Biological Sciences</u>	<u>Social Sciences</u>	<u>Earth Sciences</u>
4 2 Botany	3 3 Sociology	3 4 Geology
1 0 Zoology	3 2 Psychology	3 3 Soils
2 3 Forestry	3 6 Social psychology	
2 0 Wildlife management	1 1 History	
1 6 Ecology	4 3 Recreation	
	0 1 Economics	
<u>Government</u>	<u>Business Management</u>	<u>Applied Arts</u>
1 1 Political science	9 1 Personnel management	3 7 Aesthetics
7 3 Public administration	3 1 Financial management	6 7 Landscape architecture
2 2 Law	3 2 Business administration	0 6 Architecture
3 0 Law enforcement		2 0 Visual aids
<u>Engineering</u>	<u>Communication</u>	<u>Information Processing</u>
1 2 Civil engineering	2 3 Speech	1 10 Statistics
3 4 Sanitary engineering	2 2 Technical report writing	0 3 Electronic data processing
0 0 Hydraulic engineering	0 2 Public relations	1 0 Mathematics
1 0 Construction planning	0 4 English composition	
<u>Integrative Fields</u>	<u>Techniques</u>	<u>Concepts</u>
0 1 Geography	3 2 Estimation of use	10 6 Multiple-use management
2 3 Conservation	3 3 Measurement of use	1 1 Preservation of near natural areas
0 3 Regional planning	2 3 Surveys	0 3 Relative dominance among resource uses
3 3 Decision theory	4 4 Valuation of recreation	
3 1 Conflict resolution	1 4 Aerial photo interpretation	

Numbers show how many respondents selected each concept; left column represents selections of Ranger District staffs, right column represents selections of Forest Supervisor staffs.

n=16 for Ranger District staffs
n=17 for Forest Supervisor staffs

Derivation: Recreation managers were asked, by questionnaire: "List below the concepts, information, or skills that you believe would be most useful in dealing with recreation management problems today. You may wish to use the list on page 4 for ideas." Page 4 of the questionnaire was identical with the above table except that (a) communication skills were not listed, and (b) number of responses, of course, were not shown.

APPENDIX C

Educational Significance of Jobs in Recreation Management

UNCLASSIFIED SOURCEBOOK
SECURITY AGENCY ANNUAL REPORT FOR
FISCAL YEAR 1967, U. S. SECRET SERVICE

<u>Page</u> <u>Number</u>	<u>Page</u>	<u>Page</u> <u>Number</u>	<u>Page</u> <u>Number</u>
1a	1	1a	1
1a	2	1a	2
1a	3	1a	3
1a	4	1a	4
1a	5	1a	5
1a	6	1a	6
1a	7	1a	7
1a	8	1a	8
1a	9	1a	9
1a	10	1a	10
1a	11	1a	11
1a	12	1a	12
1a	13	1a	13
1a	14	1a	14
1a	15	1a	15
1a	16	1a	16
1a	17	1a	17
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1a	19	1a	19
1a	20	1a	20
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1a	90	1a	90
1a	91	1a	91
1a	92	1a	92
1a	93	1a	93
1a	94	1a	94
1a	95	1a	95
1a	96	1a	96
1a	97	1a	97
1a	98	1a	98
1a	99	1a	99
1a	100	1a	100

cc	26	<u>Apply guidelines and procedures in administration of undeveloped recreation areas</u>	26
cc	26	<u>Inspect recreation special uses and concession-operated areas and sites for compliance with established administrative guidelines</u>	37
cc	26	<u>Inspect recreation reports</u>	4
cc	27	<u>Investigate and review recreation plans</u>	42
cc	26	<u>Inspect housing and housing</u>	14
cc	27	<u>Inspect site problems</u>	28
cc	26	<u>Site inspection problems occurring commonly on recreation areas managed by the Forest Service and by other agencies</u>	28
cc	27	<u>Inspect government-operated recreation areas and sites for compliance with established administrative guidelines</u>	38
cc	28	<u>Coordinate recreation management on Forest lands with that on other lands on which other agencies through cooperative agreements</u>	35
cc	28	<u>Re-evaluate and comment on revision of recreation</u>	43
cc	28	<u>Monitor progress for between Forest Service and other agencies of recreation opportunities</u>	57
cc	14	<u>Prepare data for routine reports</u>	4
cc	16	<u>Review approval by higher officials of plans submitted by participants or contractors</u>	7
cc	33	<u>Relay to Service and cooperating agencies of routine information concerning recreation administration</u>	8
cc	36	<u>Evaluate construction plans for recreation residences</u>	42
cc	35	<u>Control wildlife conditions</u>	33
3	26	<u>Collect data for routine reports</u>	3
3	37	<u>Get data and information on recreation plans and records</u>	3
3	26	<u>Be trained in recreation administration and other functions</u>	10
3	26	<u>Review administration in compliance with established standards</u>	22
3	26	<u>Survey administrative needs of recreation management, and recreation as compared with needs of other Forest uses</u>	53
3	26	<u>Prepare data for recreation plans, recreation special uses, etc.</u>	24
3	26	<u>Evaluate government-owned recreation sites for concession operation</u>	39
3	23	<u>Evaluate the status of each recreation special use</u>	45

Derivation of Significance Level: Jobs are listed in decreasing order of significance for education of recreation professionals, based on the rankings for each job according to the following criteria:

Perceived importance of job to mission of recreation management
 Manager's preference for additional college preparation
 Troublesomeness to managers
 Time allocated to function within which job occurs

Levels were assigned according to the following ranking of the above four variables:

<u>Significance Level</u>	<u>Perceived Importance</u>	<u>Additional Preparation</u>	<u>Troublesomeness</u>	<u>Time Allocated</u>
1a	1-10	1-15	1-12	1-10
1b	11-20	1-15	1-12	1-10
1c	21-43	1-15	1 12	1-10
2a	1-10	1-15	13-43	1-10
2b	1-10	16-43	1-12	1-10
2c	1-10	16-43	13-43	1-10
3a	11-20	1-15	13-43	1-10
3b	11-20	16-43	1-12	1-10
3c	11-20	16-43	13-43	1-10
4a	21-43	1-15	13-43	1-10
4b	21-43	16-43	1-12	1-10
4c	21-43	16-43	13-43	1-10
5	1-43	1-43	1-43	11+

Job No. refers to the job as numbered on the questionnaire

EDUCATIONAL SIGNIFICANCE
 RECURRENT RECREATION MANAGEMENT JOBS
 FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Sig</u> <u>Level</u>	<u>Item</u>	<u>Job Statement</u>	<u>Job</u> <u>Number</u>
1a	1	<u>Coordinate management plans and objectives for the various resources</u>	25
1a	2	<u>Ensure administration of near-natural areas according to dedication papers, management plans, and policy statements</u>	18
1a	3	<u>Set management objectives for use in development of recreation plans</u>	32
1a	4	<u>Evaluate administration of near-natural areas, undeveloped recreation sites, and developed recreation sites</u>	41
1b	5	<u>Advise Districts in preparation and revision of recreation special use permits (winter sports areas, etc.)</u>	27
1b	6	<u>Prepare permits for recreation uses such as privately-owned camps and resorts and winter-sports concessions</u>	29
1b	7	<u>Develop standards for administration of recreation resources such as undeveloped recreation sites and swimming sites, and for operation of facilities operated under recreation special use permits</u>	31
1b	8	<u>Plan and conduct surveys of the impact of recreation on other Forest uses, and vice-versa</u>	16
1c	9	<u>Evaluate appeals on recreation special use permits by permittees</u>	37
1c	10	<u>Compose routine letters and reports</u>	3
2a	11	<u>Inform self of current developments in recreation activities and management</u>	6
2a	12	<u>Train Forest and District personnel in recreation administration</u>	7
2b	13	<u>Coordinate such matters as (a) District plans and programs, (b) recreation use permits with other Forest uses before approval, or (c) maintenance</u>	23
2c	14	<u>Inform District personnel of current developments, and Regional personnel concerning progress and findings</u>	2
2c	15	<u>Coordinate recreation plans with those of other agencies to avoid duplication or oversupply of facilities</u>	22

3a	16	<u>Encourage cooperation</u> with organizations interested in use and management of Forest resources	4
3a	17	<u>Cooperate</u> with public and private organizations interested in outdoor recreation	5
3c	18	<u>Review District actions</u> in recreation administration such as reports, special use applications, maintenance plans, etc.	35
3c	19	<u>Coordinate</u> surveys and studies	24
3c	20	<u>Plan various programs</u> for recreation administration such as training sessions, administrative studies, and impact surveys	33
4a	21	<u>Plan field training seminars</u> for solution of typical management problems	13
4c	22	<u>Evaluate and comment</u> to District and to Regional Office on recreation reports, requests for restriction of occupancy and use, etc.	36
4c	23	<u>Follow-up on actions</u> specified by Regional Forester	12
4c	24	<u>Revise National Forest Recreation Management Plan</u>	28
4c	25	<u>Furnish skills</u> to Districts for development of maintenance plans	26
4c	26	<u>Maintain National Forest Recreation Management Plan</u>	9
4c	27	<u>Approve special-use permits</u> when application is in accordance with policy	17
4c	28	<u>Revise special-use permits</u> as advisable in response to requests	38
4c	29	<u>Inspect</u> District recreation administration, in cooperation with personnel of Regional and Washington Offices	39
4c	30	<u>Supervise</u> District personnel in recreation administration	11
4c	31	<u>Guide official visitors</u> to key managers or projects	1
5	32	<u>Combine reports</u> from Districts to Forest total	8
5	33	<u>Advise District personnel</u> in recreation administration	10
5	34	<u>Participate in surveys</u> planned by Regional Office	14
5	35	<u>Instruct Rangers</u> regarding necessary administrative studies	15
5	36	<u>Analyze recreation reports</u> for the Forest as a whole	19
5	37	<u>Comment</u> on reports forwarded to Regional Office	20

5	38	<u>Coordinate</u> records of Districts with those of Forest	21
5	39	<u>Revise permits</u> for concession management of government-owned facilities	30
5	40	<u>Revise policies</u> of recreation administration as directed and guided by Regional Office	34
5	41	<u>Determine need</u> for formal administrative studies	40

Derivation of significance level: See page G-3

EDUCATIONAL SIGNIFICANCE
PROJECT JOBS FOR RECREATION MANAGEMENT
FOREST SUPERVISOR STAFF, U. S. FOREST SERVICE

<u>Sig Level</u>	<u>Item</u>	<u>Job Statement</u>	<u>Job Number</u>
1a	1	<u>Prepare area development plans</u>	1
1a	2	<u>Prepare site development, improvement, or rehabilitation plans</u>	2
1a	3	<u>Sample recreation use by automatic & semi-automatic techniques</u>	21
1a	4	<u>Check compliance with contract provisions on developments constructed by contractors</u>	7
1a	5	<u>Administer fees in accordance with Land and Water Conservation Fund Act (Collect and check compliance)</u>	18
1b	6	<u>Inform interested agencies and groups of the NFRMP to insure coordination of development for local recreation needs</u>	20
1b	7	<u>Prepare interim management prescriptions for potential sites listed in National Forest Recreation Management Plan (NFRMP)</u>	3
2b	8	<u>Reclassify specific areas for management under different objectives (for example, wilderness)</u>	10
2b	9	<u>Study areas proposed for reclassification to or from near-natural or developed statuses</u>	11
2b	10	<u>Clean up and maintain recreation areas and sites</u>	16
2b	11	<u>Rehabilitate or improve existing facilities</u>	9
3b	12	<u>Construct developments under Force Account funds (FS Personnel)</u>	6
3b	13	<u>Participate in public hearing on reclassification proposal</u>	13
3b	14	<u>Prepare rules for visitor activities on improved areas and sites</u>	17
3b	15	<u>Maintain portions of Sections II, III, and IV of the NFRMP</u>	5
5	16	<u>Mark boundaries of potential areas and sites</u>	4
5	17	<u>Submit "As Built" site plans on all sites as completed</u>	8
5	18	<u>Prepare informative brochure for reclassification proposal</u>	12
5	19	<u>Prepare final reclassification report after hearing</u>	14
5	20	<u>Prepare maintenance and operation plans</u>	15
5	21	<u>Revise compliance plans for administration of Land and Water Conservation Fund fees</u>	19
5	22	<u>Inventory facilities and conditions</u>	22

APPENDIX H

Details of Structure for Wildland Recreation Management

DETAILS OF STRUCTURE FOR WILDLAND RECREATION MANAGEMENT

A. Problems or Objectives

Objectives or goals
Identification and specification

Problems
Identification and specification

B. People

Agents
Individuals, groups, communities, cultures
Characteristics: socio-economic, geographic distribution

Recreation
Definitions
Effects of recreation: physical, mental, social
Values to individual and to society
Satisfactions, dissatisfactions, attitudes

C. Activities

Recreation demand
Needs, wants, preferences, participation
Factors affecting participation
Trends

Participation
Relative popularity among activities
Records

Types
Resource-or visitor-oriented
Participant or spectator
Spontaneous or organized
Physical, mental, or social
Seasonality or time of participation
Public or commercial

D. Resources

Types

Basic resources: cultural, natural
Developments: areas, facilities, improvements
Qualities: physical, aesthetic

Inventories

Amounts, by types
Carrying capacities

Suppliers

Public: federal, state, regional, county, municipal, district
Private: corporations, individuals

Access: physical, institutional, cost

E. Academic Tools and Experience

Professional education, knowledge, and skills

Sciences: biological, earth, social
Arts: basic, applied (aesthetics, landscape architecture)
Engineering: civil, sanitary, hydraulic
Integrative: planning, geography, conservation
Techniques: analytical, survey, research, statistical, etc.

Research

Scientific method

Sources

Bibliographies, data, maps, abstracts, indexes, etc.

Experience

F. Philosophies and Institutions

Philosophies

Individual, organizational
Management philosophies: private resources, public resources
Resource utilization: preservation, exploitation, balanced
Value systems

Institutions

Types: economic, educational, legal, governmental, religious, etc.
Ownership and jurisdiction over resources and programs
Administrative regulations

G. General Management

Administrative programs

Policy-making or decision-making

- Concepts, alternatives, criteria, evaluations
- Coordination with other agencies
- Coordination with other resource users

Organization

- Levels: policy, administration, operation

Financial management

- Costs, revenues, income sources, budgeting, financing, fees

H. Management of, and for, People

Visitor management

- Control of visitor activities
- Interpretation, education, and public relations
- Visitor welfare: safety, sanitation, liability

Personnel management

- Leadership
- Control of employee activities, supervision, training
- Recruitment, retention, separation

Business contacts

- Contracts, leases, permits
- Public relations

I. Resource Management

Planning and design

- National, state, regional, municipal, area, site, improvement

Construction

- Contract administration

Operation

- Resource protection
- Visitor satisfaction
- Management efficiency

Resource use

- Coordination among uses: resource allocation, multiple use
- Relationship among uses: competitive, compatible, complementary
- Coordination among uses
- Resource allocation, multiple use

APPENDIX I

**Details of Suggested Courses
in
Wildland Recreation Management**

OUTLINE CONCERNING THE DEVELOPMENT OF COURSES

A. Objective of education for recreation management 1/

Preparation, communication, and representation of our knowledge concerning outdoor recreation and techniques of management education.

B. Subject matter of outdoor education

Education opportunities available to national, cultural, and international persons and developments to enhance their
degree of awareness and the influence on individual lives and on the society
nature and type of recreation opportunities desired by various
management to enhance an optimal recreational opportunities and the
recreational experience, today and in the future
Allocation of resources between recreation and other uses

C. Outline for detailed planning of system and courses

Subject matter and professional skills
Believed knowledge, and how to find and use it
Scope, depth, and balance between them
Development to the expected job
Organization of subject matter and skills
Analytic classification
Simple but strong structure of fundamental concepts
Synthetic construction
Sequence, continuity, and integration of information and skills
Encouragement to learning
Expected behavior of students during education process

D. Purpose of educating the student in management for outdoor recreation, and results desired from such education 2/

Develop interests and knowledge in above subject matter
Develop appreciation for recreation as part of individual life and society
Create awareness of values and develop individual value systems related to recreation management and to resource management
Improve intellectual abilities as applied in outdoor recreation management -- that is, basic knowledge, plus skills in using knowledge through comprehension, application, analysis, synthesis, and evaluation

1/ Adapted from Brown:20

2/ Adapted from Bell:112 and Bloom

STATE AND OBJECTIVES OF COURSE IN RECREATION MANAGEMENT

1. Introduction to Recreational Management

- Purpose:** Introduce, overall view of managing resources and visitors for recreation; basic recreation opportunities in essentially wilderness or relatively undeveloped environments; costs paid through wilderness; wilderness recreation in perspective of entire range of recreation opportunities and costs; management of development areas 1/3, wilderness areas 1/3; emphasis on recreation in the multipurpose context
- Objectives:** Provide general introduction to wilderness recreation management; develop attitudes and appreciations and create awareness of personal values relevant to recreation and to natural and cultural resources; introduce relevant knowledge and skills; emphasize available information and where to find it; emphasize knowledge, comprehension, and application over class analysis, synthesis, and evaluation
- Format:** Two 5-hour lectures per week
One 2- to 3-hour lab per week
Lab will discuss field notes, discussion of assigned problems, and discussion of films or articles on controversial subjects
Problems assigned to apply current lecture materials assigned for individual solution in the lab of approximately one problem per 1/2 week

Prerequisites: Introductory course in ecology, psychology, or social psychology

2. Management for the Recreation Visitor

- Purpose:** Review needs and perceptions, influence of recreational experiences on the individual and the society and impact of these factors on resource and visitor management
A selected range of important services for, and management of, the recreation visitor
- Objectives:** Increase knowledge of visitor behavior, needs, desires, and effects of recreation on the visitor and of the visitor on the resource
Present selected techniques for increasing the likelihood of high-quality experiences through serving and managing visitors, based on the above knowledge and visitor acceptable limits of cost and of resource utilization
Emphasize knowledge, comprehension, and application over class analysis, synthesis, and evaluation
- Format:** 2 semester-hour credits
One 5-hour lecture per week
- Prerequisites:** Course 11

3. Planning for Recreation Resource Development

- Scope:** Concepts of planning, in theory and in practice
Planning for development of recreation opportunities on large areas such as National Forests or Ranger Districts
Introduction to national, regional, and site planning
- Objectives:** Develop knowledge and skills in planning outdoor recreation opportunities for extensive activities
Introduce relevant knowledge and skills from supporting fields
Identify sources of needed information and data
Emphasize analysis, synthesis, and evaluation more than knowledge, comprehension, or application
- Format:** Three or four semester-hour credits
Two 1-hour lectures per week
One 3-4-hour lab per week
The first hour of each lab period will feature explanation and lecture on the current portion of the field plan.
Balance of lab period will be field or lab, depending on need.
- Field planning problem required, based on area reachable during labs. Problem will continue all semester. Individual or team solutions, depending on student or teacher preference. Recommend 4 credits for individual solutions.

Prerequisite: Course #1

4. Recreation Management Seminar

- Scope:** Techniques of problem analysis, discussion, and effectuation of solutions
Problems and policy issues at national, regional, and local levels
Conflicts between recreation uses and other resource uses, and conflicts among recreation activities
- Objectives:** Develop thought processes as applied to problems in recreation management
Improve ability in anticipation, identification, specification, and resolution of conflicts
Develop appreciation and understanding of human values and the disagreements based upon them
Emphasize analysis, synthesis, and evaluation more than knowledge, comprehension, and application
- Format:** Three semester-hour credits
Two 1½-hour lectures per week through the techniques of problem analysis, discussion, and implementation.
Two 1½-hour group discussions per week thereafter on topics of student choice, with approval of instructor

Prerequisite: Course #1

1. INTRODUCTION TO WILDLAND RECREATION MANAGEMENT

Introduction

- 1 Course objectives
- 2 Background of outdoor recreation
- 3 Economic and social importance of outdoor recreation
- 4 Multiple use and the nature of management

The Recreation Visitor and His Activities

- 5 Popularity of activities; factors affecting participation
- 6 The nature of recreation
- 7 Psychological and sociological aspects
- 8 Classification of recreation activities

Recreation Resources, Facilities, and Suppliers

- 9 Overview of recreation opportunities
- 10 National Forests
- 11 National Parks
- 12 State Parks
- 13 Water-management agencies
- 14 Private Lands
- 15 Private operations on public lands

Professional Knowledge and Skills

- 16 Professional education of foresters;
relevant knowledge and skills from other fields of study

Institutions and Philosophies

- 17 Philosophies of recreation management and resource management
- 18 Historical development;
current governmental and other institutional restrictions

General Management

- 19 Objectives, management levels and decision-making
- 20 Management principles and criteria
- 21 Adjustment of management to reach multiple and changing goals
- 22-23 Administration in action (case study)
- 24 Cost of development and operation; financing

Management for the Visitor

- 25 Nature of visitor impacts on management for resources and visitors
- 26 Guiding and controlling the activities of visitors
- 27 Interpretive services

Resource Management

- 28 Development policies and regional planning
- 29 Area planning
- 30 Site planning
- 31 Maintenance and operation of facilities
- 32 Management of wilderness, natural, and near-natural areas
- 33 Landscape management; modification of resource harvesting

2. MANAGEMENT FOR RECREATION VISITORS

THE NATURE OF VISITORS AND USE

- 1 Leisure - its use and its relevance to life style
- 2 General characteristics of visitors and use; general use of leisure time
- 3 Vacations and weekend trips
- 4 Parks and recreation areas; camping in general
- 5 Visitor dissatisfactions; barriers to participation
- 6 Effects of outdoor recreation on mental health
- 7 Information sources and use of data
- 8 Trends in outdoor recreation - attendance and activities

VISITOR MANAGEMENT PROBLEMS AND TECHNIQUES

Overview

- 9 Introduction
- 10 Development of criteria for management and for regulation of visitors

Meeting the needs and desires of visitors

- 11 Determination of visitor preferences and knowledge
- 12 Modifications in management for recreation and for other wildland products
- 13 Design of development sites and areas

14 Techniques of visitor control (general)

Resource protection and damage prevention

- 15 Unintentional damage
- Deliberate damage and nuisance
- 16 Enforcement of regulations
- 17 Vandalism
- 18 Littering

Visitor protection and welfare

- 19 Public health and safety
- 20 Liability and insurance

Public relations and interpretation

- 21 Public relations -- theory
- 22 Public relations -- applications
- 23 Interpretive services at the site
- 24 Guides and popular literature

Fee services

- 25 Entrance and user fees in public areas
- 26 Concessions and contracts

Estimation of attendance

- 27 Estimation of current attendance and visitor characteristics
- 28 Prediction of future attendance

3. PLANNING FOR RECREATION RESOURCE DEVELOPMENT

Introduction

- 1 Course description; an abbreviated plan
- 2 Types of outdoor recreation areas; importance of follow-through on plans
- 3 Planning for national and regional levels
- 4 Planning for sub-state regions
- 5-7 Applied regional planning (case study)

Basic Elements of Area Planning

- 8 Elements of a recreation plan; sources of information and inventories
- 9 Opportunistic planning; necessity for flexibility
- 10 Applied area planning: National Forest Recreation Plans, National Park Master Plans or State Park Master Plans

Estimation of Visitor Participation and Desires

- 11 Prediction of demand: general techniques
- 12 Prediction of demand: use of census and preference data
- 13 Sources of information on preferences and activities
- 14 Survey techniques: preferences and attendance
- 15 Trends in recreation styles, activities, and equipment

Planning for Provision of Recreation Opportunities and Guidance of Activities

- 16 The concept of a recreation complex
- 17 Landscape management; scenic roads; other aesthetic considerations
- 18 Criteria for land acquisition and development
- 19 Criteria for site selection and development
- 20 Intensity of development

Site Development

- 21 Site planning
- 22 Design standards for facilities and improvements
- 23 Utilities
- 24 Construction; contract specifications and enforcement

25 Concessions

Benefits, Costs, and Financing

- 26 Economics of recreation: introduction and cost estimates
- 27 Economics of recreation: estimation of benefits
- 28 Budgeting
- 29 Financing methods for investment and operation

30 Completion of Planned Developments; The Decision-Makers

31 Summary of Planning as a Process

32 Critique of Student Plans

4. SEMINAR IN WILDLAND RECREATION MANAGEMENT

1 Introduction

2 Some policy problems related to leisure and recreation

Techniques for Problem Analysis, Discussion, and Follow-Through

3 Processes of problem-solving and group discussion

4 Problem identification and specification

5 Sources of information on wildland recreation management

6 Processes of decision-making and idea acceptance

7 Factors influencing completion of planned developments

8 Action through legislation

9 Management conflicts, special-interest groups, and conflict resolution

10 Policy-making

Selection Problems of Policy and Administration

Students and professor mutually agree on problems for in-depth study through readings, group discussion, and reports. Problems should be tied to existing situations or to case studies; the following topics are recommended:

11 Determination of management objectives and/or policies

12 Identification and analysis of conflicts, managerial needs, and/or policies

13 Development of standards for development and operation

14 Appropriate roles of public and private suppliers

15 Appropriate roles among public agencies

Federal, State, Local; among agencies at each level

16 Coordination among the various suppliers of recreation opportunities

17 Evaluation of recreation impacts on other resource uses

18 Evaluation of recreation impacts on national, regional, or local economies

19 Coordination of recreation with management for other resource uses

20 Fees or free use for public recreation areas

21 Appropriate levels of fees

22 Justification for wilderness and near-natural areas

23 How much wilderness should be dedicated?

24 Appropriate managerial actions on wilderness areas

25 Appropriate degree of regulating visitor activities

26 Appropriate techniques of visitor control

27 Guidance of use through zoning or rationing

28 Appropriate kinds and levels of data collection

APPENDIX J

Supporting Courses in Forestry and in Other Departments

KNOWLEDGE AND SKILLS FROM COURSES OTHER THAN RECREATION

Excellence in recreation management requires knowledges and skills which can be best obtained in courses other than the four proposed in recreation management.

The more important of these knowledges and skills have been allocated to courses which normally would appear in a current curriculum of forestry or general resource management. The courses underlined below should contain education for skills required to deal with the specific recreation management problems listed under each course.

Speech

Informal explanation of company or agency policy to interested individuals or groups

Formal explanation of policy as expert witness or featured speaker

Technical Writing and/or Journalism

Composition of routine letters and reports

Preparation of public information releases such as news releases

Preparation of special reports resulting from research or administrative studies

Mensuration, Resource Management, and/or Statistics

Planning, supervision, and participation in surveys

Introduction to electronic data processing and computer technology

Sampling of recreation use by automatic and semi-automatic means

Wildlife Management, Entomology and Pathology, Ecology and Forest Fire

Recognition of critical resource problems or hazards related to, or caused by, recreation visitors; techniques for dealing with resource aspects of such problems or hazards

General Education

Collection, preparation, posting, processing, and combining data for reports

Coordination of data, studies, or administrative work involving several management units or resources

In addition to the above rather standard courses, the following would be desirable to complete the recreation manager's abilities. These courses are now being more popularly advocated, and may soon become standard portions of curricula in natural resources management:

Social Sciences

Most jobs in recreation management could be strongly supported by knowledge from social sciences such as psychology, social psychology, and sociology.

Principles of Business Management

General introduction to financial and other business management.

Principles of law and of contract administration

Introduction to Research Methods

Evaluation, approval, design, and execution of simple surveys and studies
Automatic data processing and computer technology
Determination of needs for research

Personnel Management

Techniques for training and supervising employees

Cooperation with interested public and private organizations and individuals